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EDITORIAL NOTES

The report of the Massachusetts Commission on Industrial and Technical Education is a highly important document. The relation of education to the welfare of the community, and the peculiar significance of industrial and technical education, are considered in so broad and fundamental a manner as to give the conclusions of the commission convincing force. While Massachusetts may be more particularly in need of certain kinds of technical education on account of its important manufacturing interests, the general principles of the report are vital to education everywhere in the country. We believe, therefore, that we can perform no better service to educators and legislators in all parts of the country than by reproducing here the essential features of the general report of the commission, for a copy of which we are indebted to the courtesy of President Carroll D. Wright, of Clark College, chairman of the commission.

The commission, consisting of Carroll D. Wright, chairman; Warren A. Reed, vice-chairman; John Golden, secretary; Mary Morton Kehew, George H. Martin, Nathaniel I. Bowditch, John P. Murphy, Simeon B. Chase, and George E. Keith, held several public hearings. As a result it records the following impressions as to the

ATTITUDE OF DIFFERENT CLASSES TOWARD THE SCHOOLS

"1. There is a widespread interest in the general subject of industrial education, or special training for vocation. This interest shows itself in two distinct forms, as manifested by two classes of people. There is, first, a general and theoretical interest, felt by students of social phenomena and by expert students of education; and, second, a more practical and specific interest, felt by manufacturers and wage-earners. Men and women who have been brought into intimate contact with the harder side of life, as it appears among the poorer people in the cities, who are grappling with the variety of problems of childhood to which city life gives rise, think they see in some form of industrial education a means of securing earlier and greater efficiency as wage-earners, more self-reliance and self-respect, steadier habits of industry and frugality, and through these the opening of avenues to better industrial and social conditions.

"The broader-minded students of education, men who look at their own work in the light of all its relations to society and to individuals, are coming more and more to feel that education is more than schooling of the old-fashioned type; and that for the fullest development of a child he must early and continuously be regarded as a member of the whole community, must be familiar with all its activities, and must be taught progressively to share in those activities, giving as well as receiving, producing as well as consuming, doing as well as learning.

They see that this sort of training is used in the education of the feeble-minded, in the reformation of wayward and vicious children at reform and truant schools, and that it is being used to elevate the colored race in the South; and they ask why it may not be equally efficient in stimulating and directing the higher orders of mind, in preventing as well as curing juvenile delinquency, and in improving the social conditions of white as well as black children.

"2. The hearings showed that, besides this general and theoretical interest, there is a practical and specific interest among manufacturers and wage-earners because of a *personal need*.

"The commission was told at almost every hearing that in many industries the processes of manufacture and construction are made more difficult and more expensive by a lack of skilled workmen. This lack is not chiefly a want of manual dexterity, though such a want is common, but a want of what may be called *industrial intelligence*. By this is meant mental power to see beyond the task which occupies the hands for the moment, to the operations which have preceded and to those which will follow it—power to take in the whole process, knowledge of materials, ideas of cost, ideas of organization, business sense, and a conscience which recognizes obligations. Such intelligence is always disconnected, not with its conditions, but with its own limitations, and is wise enough to see that the more it has to give, the more it will receive.

"Manufacturers confidently believe that a system of industrial education, wisely planned, would tend to develop such intelligence, while it increased technical skill.

"That large numbers among wage-earners have the same faith was shown to the commission by numerous representatives who testified before it, and by the statistics showing the number of men and women who are now availing themselves of existing opportunities. The numbers of workmen in the evening classes of the textile schools in this state; the experience of the Evening Trade School in Springfield, and of those of New York and Philadelphia; the large classes maintained by the Young Men's Christian Association; and the enormous number seeking to advance themselves through technical education in the correspondence schools (a number estimated at fifty-five thousand in Massachusetts)—these facts prove conclusively that the interest is real and vital.

"3. The commission was made aware of a growing feeling of inadequacy of the existing public-school system to meet fully the need of modern industrial and social conditions. The opinion was expressed by many speakers that the schools are too exclusively literary in their spirit, scope, and methods. Where there was not a pronounced opinion, there was a vague feeling of dissatisfaction with results. This does not imply hostility. Everywhere the commission found the people loyal to the purpose of the schools, and proud of the advanced position which the state has held, and they do not complain of the cost. They hesitate to criticise, and are far from desiring any revolutionary change; but they are inquiring with open minds whether some modifications may not be possible, by which the schools may

reach in a more practical way the great body of children and youth. This phase of the subject is discussed more at length in a later part of this report.

"4. The commission was not able to learn that even the people who are most interested in industrial education have any definite ideas as to its proper scope or method. One or two carefully considered plans were presented, and some practical suggestions were offered by Mr. Charles F. Warner, principal of the Technical High School in Springfield, whose communication is appended. With these exceptions, when the question was asked, 'Have you any plan to propose for meeting the need of which you speak?' the answer was, 'I have not thought so far,' or, 'I leave that for the commission to decide.'

"5. The commission early became aware that its purpose and work encountered the suspicion and hostility of many of the labor unions of the state. This was expressed by individual representatives, and was evidently due to misapprehension. It was suspected that the commission was created to formulate a plan for trade schools supported at public expense. The opposition to such schools is based on the fear that they would furnish workmen in numbers sufficiently large to effect the labor market, and bring about a lowering of wages. These schools are also opposed on the ground that they might furnish workmen ready to take the place of union men during the existence of a strike. 'Scab hatcheries' is the significant term by which such schools are characterized. To such schools the labor unions declare themselves totally and unalterably opposed.

"The objection urged by the unions is fully met by the closing paragraph of Sir William Mather's address:

Please take notice of what I said about the avoidance of teaching a trade to the extent of causing a lad to say, after leaving the industrial school: "I am a printer," "I am a cotton-spinner," "I am a mechanic or a carpenter." In the first place, it is detrimental to the lad's own interests. He becomes somewhat conceited before he has got through the proper training by actual practice. It tends to deterioration of skill and intelligence in trades, which can only be fully acquired through work done on a commercial scale. It will tend to discredit industrial education.

"6. To technical schools in distinction from trade schools the commission found little opposition. In fact, many of the union men expressed themselves heartily in favor of schools which would offer to men already engaged in industries the opportunity to broaden their knowledge of the principles of their trade. This would tend to increase the efficiency of the workers in a given trade, while the closed door was maintained against outsiders.

"At one or two of the hearings, individuals, while not opposed to technical education in this narrow sense, would not favor it, believing that American workmen are already sufficiently skilful and sufficiently intelligent. It was declared that they have nothing more to learn.

"7. To the question, 'If technical education were to be furnished, by whom should the expense be borne?' the most common answer was: 'Wholly or partly by the State.' There is a general feeling that the municipalities are already spending as much money as they can afford for educational purposes, and that

any new department in the direction of industrial education, which must be largely of an experimental nature, should be undertaken by the state, or at least with substantial assistance from the state."

This is followed by an admirable historical sketch of the

GROWTH OF OUR PRESENT SCHOOL SYSTEM AND ITS ISOLATION
FROM INDUSTRIAL AND SOCIAL LIFE

"Industrial and technical education cannot be considered apart from the general system of education out of which it must grow, and of which, if it is to be successful, it must form an integral part.

"The original purpose of public education in Massachusetts was to fit its youth, through the learning afforded by schools, to be intelligent citizens.

"The supreme problems which presented themselves to the leaders in early Massachusetts history were intellectual problems—problems of church and state. To establish and develop a self-governing community, under the new conditions which confronted them, demanded intelligence of a high order and widely diffused. These men, themselves educated in the most advanced learning of the time, saw in the study of classic languages and mathematics a means of developing the power of concentrated and sustained thought, of clear and logical reasoning, and of balanced judgment. They believed that the study of the history and literature of the past tended to widen the horizon of thought, to bring to the solution of the problems of today the experiences of yesterday, so that successes and failures of other peoples in other times might serve as guides and warnings for people here and now. They called this a liberal education—an education that liberated, that freed from the bondage to narrow and local prejudice, and made the vision of life keen and far-sighted.

"Out of this purpose grew the colleges and the Latin schools, and for a similar purpose the universal common schools. This belief in the efficacy of learning, deeply rooted in the past, has never lost its hold upon the thought and the imagination of our people; so that the educational system based upon it, begun in poverty, has expanded with the means of the people until it commands the admiration of the world.

"Whenever public interest has seemed to wane, ardent reformers have appeared who have stimulated or shamed the people into new efforts. But from the beginning the purpose has remained unchanged—to promote intelligence as a basis of citizenship. The lavish expenditure upon common schools, high schools, and colleges has this for its chief aim.

"The schools had another, but wholly subordinate, function. Indirectly, they were expected to influence favorably all the callings in life. The more intelligent the person should become, the better workman he was likely to be—more thoughtful, more careful, more considerate, more provident, more inventive; so that the system of education through schools was likely to promote the material prosperity of the state. That is what the early lawmakers meant when they coupled 'learning and labor' as 'profitable to the commonwealth.'

"But the special training for vocations was provided for by another system—the system of apprenticeship, which included even the professions. Young men who would be lawyers or doctors or ministers learned the technique of their callings in the homes or the offices of older practitioners. Farming was learned by work on the farm, trades by work in the shops, and housekeeping in the home.

"The two systems did not conflict with each other. The master was bound by the terms of the indenture to keep his apprentice at school. So the two forms of training went on simultaneously for several generations, each effective in its way—general training through the schools, industrial training through apprenticeship. The child and the youth were never out of touch with the school life, so that there never came a time of abrupt transition. There was no chasm.

"The apprentice system is calculated for stationary conditions. It tends to conserve ancient traditions and methods, and cannot maintain itself in the face of change. Consequently and necessarily with the development of modern science the old apprentice system waned and gradually disappeared.

"Special training for vocations took its place, first, in the professions in schools of theology, of medicine, and of law. The new idea was next applied to the preparation for teaching, and normal schools were established. The advent of railroads called for a new type of engineers, and technical schools were established. With the advent of the factory system, the introduction of machinery, the making of machines more and more automatic, the division and subdivision of labor, the apprentice system gave way in the trades and manufactures.

"While this change in the vocations was going on, another change was also in progress. The schools were gradually claiming more and more time. The school year was lengthened, school attendance was made compulsory, and the age limits were raised. Every day lost by the apprentice system was gained by the school, until, imperceptibly, under steady pressure, the school came to stand alone as the only means of training, and the child came to be almost wholly separated from the ordinary activities of life.

"In place of two systems of training, balancing each other and mutually co-operative, there came to be but one, absorbing all the time and thought and interest of the children and youth—a system of education isolated and one-sided.

"The effects of the giving-up of the apprentice system have all been aggravated by the congestion of population in cities. City life instead of rural life, life in tenements and flats instead of in houses, together with the increase of wealth, have combined to deprive great numbers of children of those opportunities for industrial activity which were inseparable from life on the farm. Well-to-do people are everywhere lamenting that there is nothing for their children to do. The children are always receiving and never giving. Food, clothing, shelter, education, amusement—all come to them as freely as the air and the sunshine.

"The effects of these changes, repeatedly brought to the attention of the commission, are not most serious where we might naturally expect—in a lack of manual efficiency, though that is marked, but on the intellectual and moral side. There is a one-sided sense of values, a one-sided view of life, and a wrong attitude toward

labor. Not having any share in productive labor, and being out of touch with it, the youth have no standards by which to measure time or possessions or pleasures in terms of cost. Many persons believe that about this point center some of the gravest of present-day social problems.

"Drawing and manual training have been introduced to supply some of these defects. But neither has been related closely to industry."

The result has been that drawing in the schools has become more and more extensively cultural in its purpose and method, and the original industrial purpose has been largely lost sight of. This probably accounts for the fact that, notwithstanding drawing was intended to stand for a distinct contribution to the industrial interests of the state, it is still classed by many flippant writers and talkers among "fads," "frills," and "fancies."

"The wide indifference to manual training as a school subject may be due to the narrow view which has prevailed among its chief advocates. It has been urged as a cultural subject mainly useful as a stimulus to other forms of intellectual effort—a sort of mustard relish, an appetizer—to be conducted without reference to any industrial end. It has been severed from real life as completely as have the other school activities. Thus it has come about that the overmastering influences of social traditions have brought into subjection both the drawing and the manual work."

PRESENT STATUS OF VOCATIONAL TRAINING

"All the callings in life for which children and youth need to be specially prepared may be roughly grouped into four classes—professional, commercial, productive, and domestic.

"Of these, the professional callings are sufficiently provided for, partly at public and partly at private expense. A large part of the burden of high-school maintenance is incurred in the interests of professional callings.

"The activities which may be classed as commercial, including all that have to do with the processes of distribution and exchange, are provided for largely at public expense. The schools send out salesmen, clerks, bookkeepers, typewriters, and stenographers in ever-increasing numbers. These are the occupations which allow clean hands and good clothes. If anything is lacking in this business training, it is special education in the principles and practice of expert salesmanship. A beginning of such instruction has been made in Boston.

"Turning to the occupations engaged in production, in distinction from distribution, we find that these are only touched educationally in their most advanced and scientific forms. No instruction whatever is furnished at public expense in the principles or practice of farming, dairying, gardening, and building trades, cabinet-making, machine-shop practice, boot- and shoe-making, tanning, printing, bookbinding, dressmaking, millinery, embroidery, design."

CONCLUSIONS

"1. As a result of the public hearings and the special investigations, the commission has arrived at the following conclusions:

"For the great majority of children who leave school to enter employments at the age of fourteen or fifteen, the first three or four years are practically waste years so far as the actual productive value of the child is concerned, and so far as increasing his industrial or productive efficiency. The employments upon which they enter demand so little intelligence and so little manual skill that they are not educative in any sense. For these children, many of whom now leave school from their own choice at the completion of the seventh grade, further school training of a practical character would be attractive and would be a possibility if it prepared for the industries. Hence any scheme of education which is to increase the child's productive efficiency must consider the child of fourteen.

"2. Children who continue in school until sixteen or eighteen, especially if they complete a high-school course, are able to enter upon employments of a higher grade, usually in mercantile pursuits, and they are able by reason of greater maturity and better mental training to learn the technic of their employment in a shorter time; but they are wholly lacking in manual skill and in what we have called industrial intelligence. For the purpose of training for efficiency in productive employments the added years which they spend in school are to a considerable extent lost years. In the cases of both classes of children the employment upon which they enter on leaving school is determined by chance.

"3. The productive industries of the state, including agriculture, manufactures, and building, depend mainly upon chance for recruiting their service. A few apprenticeships still exist in a few industries or parts of industries, and very few apprentices are indentured, and many so-called apprenticeships are falsely named. The knowledge and skill which the new men bring to the service of any industry is only what they have picked up in a haphazard way. Some bring much, and many bring little.

"4. This condition tends to increase the cost of production, to limit the output in quantity, and to lower the grade in quality. Industries so recruited cannot long compete with similar industries recruited from men who have been technically trained. In the long run that industry, wherever in the world it is located, which combines with general intelligence the broadest technical knowledge and the highest technical skill, will command the markets of the world.

"5. The industries of Massachusetts need, in addition to the general intelligence furnished by the public-school system and the skill gained in the narrow fields of subdivided labor, a broader training in the principles of the trades and a finer culture in taste as applied to material, workmanship, and design. Whatever may be the cost of such training, the failure to furnish it would in the end be more costly.

"6. The state needs a wider diffusion of industrial intelligence as a foundation for the highest technical success, and this can only be acquired in connection

with the general system of education into which it should enter as an integral part from the beginning. The latest philosophy of education reinforces the demands of productive industry by showing that that which fits a child best for his place in the world as a producer tends to his own highest development physically, intellectually, and morally.

"7. The investigation has shown the increasing necessity for a woman to enter the industrial world for the sake of self-support, and hence that she should be prepared to earn a respectable living wage, and at the same time that the attempt should be made to fit her so that she can and will enter those industries which are most closely allied to the home. The investigation has shown that that vocation in which all other vocations have their root, namely, the care of the home, has been overlooked in the modern system of education. In order that the industrial life of the community may be vigorous and progressive, the housekeepers need to be instructed in the laws of sanitation, in the purchase, preparation, and care of food, and in the care of children, that the home may be a home, and not merely a house."

RECOMMENDATIONS

"The commission does not deem it to be a part of its duty under the provisions of the resolve creating it, and in fact it is not in the power of a temporary commission, to formulate exhaustive and specific plans for industrial education, but rather to ascertain and exhibit the needs of such education and to point out how the state may make effective its existing policy, and to suggest means for the further industrial development of the state.

"There seem to be two lines in which industrial education may be developed—through the existing public-school system, and through independent industrial schools. In regard to the former, the commission recommends that cities and towns so modify the work in the elementary schools as to include for boys and girls instruction and practice in the elements of productive industry, including agriculture and the mechanic and domestic arts, and that this instruction be of such a character as to secure from it the highest cultural as well as the highest industrial value; and that the work in the high schools be modified so that the instruction in mathematics, the sciences, and drawing shall show the application and use of these subjects in industrial life, with especial reference to local industries, so that the students may see that these subjects are not designed primarily and solely for academic purposes, but that they may be utilized for the purposes of practical life. That is, algebra and geometry should be so taught in the public schools as to show their relations to construction; botany to horticulture and agriculture; chemistry to agriculture, manufactures, and domestic sciences; and drawing to every form of industry.

"The commission would also recommend that all towns and cities provide by new elective industrial courses in high schools instruction in the principles of agriculture, and the domestic and mechanic arts; that, in addition to day courses, cities and towns provide evening courses for persons already employed

in trades; and that provision be made for the instruction in part-time day classes of children between the ages of fourteen and eighteen years who may be employed during the remainder of the day, to the end that instruction in the principles and the practice of the arts may go on together.

“In regard to the second method of developing industrial education, and in view of the facts already stated and the conclusions reached by the commission, the commission submits for the consideration of the legislature the following draft of a bill as embodying its recommendations:

AN ACT TO PROVIDE FURTHER FOR INDUSTRIAL EDUCATION

Be it enacted, etc., as follows:

Section 1. The governor, by and with the consent of the council, shall appoint a commission of five persons, to be known as the Commission on Industrial Education, to serve for the term of five years and without pay. The said commission on its organization shall appoint a secretary to be its executive officer, who shall not be a member of the commission, and who shall receive an annual salary of \$3,500; and the commission may employ supervisors, experts in industrial and technical education, and such clerical and other service as may be found necessary. The necessary expenses of the commission, including clerk hire, traveling expenses, stationery, and all other incidental expenses, shall be paid out of the treasury of the commonwealth, as may be provided by law.

Section 2. The Commission on Industrial Education shall be charged with the duty of extending the investigation of methods of industrial training and of local needs, and it shall advise and aid in the introduction of industrial education in the independent schools, as hereinafter provided; and it shall provide for lectures on the importance of industrial education and kindred subjects, and visit and report upon all special schools in which such education is carried on. It may initiate and superintend the establishment and maintenance of industrial schools for boys and girls in various centers of the state, with the co-operation and consent of the municipality involved or the municipalities constituent of any district to be formed by the union of towns and cities as hereinafter provided. The commission shall have all necessary powers in the conduct and maintenance of industrial schools, and money appropriated by the state and municipality for their maintenance shall be expended under its direction.

Section 3. All towns and cities may provide independent industrial schools for instruction in the principles of agriculture, and the domestic and mechanic arts, but attendance upon such schools of children under fourteen years of age shall not take the place of the attendance upon public schools as required by law. In addition to these industrial schools, towns and cities may provide for evening courses for persons already employed in trades, and they may also provide, in the industrial schools and evening schools herein authorized, for the instruction in part-time classes of children between the ages of fourteen and eighteen years who may be employed during the remainder of the day, to the end that instruction in the principles and the practice of the arts may go on together; provided, that the independent schools authorized in this section shall be approved as to location, courses, and methods of instruction by the commission on industrial education.

Section 4. Two or more cities or towns may unite as a district for the maintenance of the industrial schools provided in the preceding section, but no such district shall be created without the approval of the Commission on Industrial Education.

Section 5. Whenever any city or town or any district, as provided in the preceding section, shall appropriate money for the establishment and equipment and maintenance of independent schools for industrial training, or shall institute new day or evening industrial courses in high or manual-training schools, the state, in order to aid in the maintenance of such schools or new industrial courses, shall pay annually from the treasury to such towns, cities, or districts providing industrial courses a sum proportionate to the amount raised by local taxation and expended for the support of schools for each thousand dollars of valuation as follows: towns and cities expending more than five dollars for each thousand of valuation for the support of public schools to be reimbursed by the state to the amount of one-half, those raising and expending between four and five dollars per thousand to an amount of one-third, and those raising and expending less than four dollars per thousand to an amount of one-fifth of the cost of maintaining industrial courses or industrial schools; provided, that no payment to any town or city shall be made except by special appropriation of the Legislature.

Section 6. The Commission on Industrial Education shall make a report annually to the legislature relative to the condition and progress of industrial education during the year, what industrial schools have been established and the appropriations necessary for their maintenance, in accordance with the preceding section, and such other recommendations as the Commission on Industrial Education may deem advisable; and especially shall the commission consider and report at an early day upon the advisability of establishing one or more secondary technical schools for boys and girls; providing for a three- or four-years' course for extended training in working principles of the larger industries of the state.

Section 7. The trustees of the Massachusetts Agricultural College are hereby authorized to establish a normal department for the purpose of giving instruction in the elements of agriculture to persons desiring to teach such elements in the public schools, as provided in secs. 3 and 4; provided, that the cost of such department shall not exceed the sum of \$5,000 in any one year, and that at least fifteen candidates present themselves for such instruction.

Section 8. Sec. 10 of chap. 42 of the *Revised Laws* of the commonwealth, and all acts and parts of acts inconsistent with this act, are hereby repealed.

"The commission recognizes that there should be no interference with the public-school system as it exists by a separate authority having co-ordinate powers with those of the board of education, yet it believes that the elements of industrial training, agriculture, domestic and mechanical sciences, should be taught in the public schools, and, as already stated, that there should be, in addition to this elementary teaching, distinctive industrial schools separated entirely from the public-school system. The foregoing recommendations, together with the bill embodying the views of the commission as to separate industrial schools, solves this problem.

"Instructions in public, elementary, and high schools would naturally and logically lead to the entrance of students on the work of the independent industrial schools; and the Commission on Industrial Education, as recommended, would deal solely and entirely with such schools, thus abrogating the Act of 1872 (sec. 10 of chap. 42 of the *Revised Laws*), leaving the school authorities on their own initiative to introduce new industrial courses in the public schools. This avoids

conflict, and insures harmony and a development of the system of industrial training so much to be desired.

"The commission in its consideration has endeavored to preserve the integrity of the public-school system, to enrich it along industrial lines, and expand it along vocational lines through independent industrial schools. This seems necessary because the present public-school system is aimed primarily to secure cultural and not industrial or vocational effects, while the departure recommended by the commission relative to independent industrial schools secures a development of the principles of industrial instruction, and entirely in accordance with the policy to which the state is already fully committed through its support of normal schools, art schools, institutes of technology, and textile schools. The Act of 1872, except in the city of Springfield, has remained a dead letter, but the state aid provided by the foregoing plan would, the commission believes, induce other municipalities to enter upon a like beneficent experience.

"In order to secure proper instruction for teachers in the elements of agriculture, there seems to be a necessity for some normal department or separate normal school. The commission has considered two propositions: one to establish a normal school in the agricultural college, and another to establish a separate normal school. The agricultural college has the plant and all the facilities for giving instruction in the elements of agriculture to those desiring to become instructors in such elements. It has therefore been considered the wiser plan to recommend a normal department in the existing agricultural college, thus saving expense and avoiding the necessity of duplicating plants. It is undoubtedly a fact that some of the seniors in the agricultural college are qualified to give instruction, thus utilizing the facilities of the college.

"In conclusion, the commission is perfectly sensible of the fact that no comprehensive plan for securing industrial education can be created by the fiat of the legislature; such plan must be the result of practical experience, growing out of experiments. This is the aim in the foregoing report and recommendations.'